Calidad de Vida: a systematic review of quality of life in Latino cancer survivors in the USA

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Abstract

Background Cancer is the leading cause of death among Hispanics/Latinos. Thus, understanding health-related quality of life (HRQOL) needs among this diverse racial/ethnic group is critical. Using Ferrell's multidimensional framework for measuring QOL, we synthesized evidence on HRQOL needs among Hispanic/Latino cancer survivors.

Methods We searched MEDLINE/PubMed, EMBASE, CINAHL, and PsycINFO, for English language articles published between 1995 and January 2020, reporting HRQOL among Hispanic/Latino cancer survivors in the USA.

Results Of the 648 articles reviewed, 176 met inclusion criteria, with 100 of these studies focusing exclusively on breast cancer patients and no studies examining end-of-life HRQOL issues. Compared with other racial/ethnic groups, Hispanics/Latinos reported lower HRQOL and a higher symptom burden across multiple HRQOL domains. Over 80% of studies examining racial/ethnic differences in psychological well-being ($n = 45$) reported worse outcomes among Hispanics/Latinos compared with other racial/ethnic groups. Hispanic/Latino cancer survivors were also more likely to report suboptimal physical well-being in 60% of studies assessing racial/ethnic differences ($n = 27$), and Hispanics/Latinos also reported lower social well-being relative to non-Hispanics/Latinos in 78% of studies reporting these outcomes ($n = 32$). In contrast, reports of spiritual well-being and spirituality-based coping were higher among Hispanics/Latinos cancer survivors in 50% of studies examining racial/ethnic differences ($n = 15$).

Discussion Findings from this review point to the need for more systematic and tailored interventions to address HRQOL needs among this growing cancer survivor population. Future HRQOL research on Hispanics/Latinos should evaluate variations in HRQOL needs across cancer types and Hispanic/Latino subgroups and assess HRQOL needs during metastatic and end-of-life disease phases.

Keywords Latino · Cancer survivor · Health-related quality of life · Supportive care

Background

Cancer is the leading cause of death among Hispanics/Latinos [1]. In the USA in 2018, there were approximately 150,000 incident cancer cases and 43,000 cancer-related deaths among Latinos [2]. For Hispanic/Latino men,

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prostate, colorectal, and lung are the three most common cancers [2]; and among Hispanic/Latina women, the three most prevalent cancers are breast, thyroid, and uterine cancer [2]. Although Hispanics/Latinos have a 25% lower cancer incidence rate and 30% lower cancer mortality rate than non-Hispanic/Latino Whites; risk of infection-related cancers such as stomach, liver, and cervical cancer is nearly twice as high among Hispanics/Latinos [1]. Moreover, emerging evidence suggests that as immigration rates slow, and more Hispanics/Latinos are in the USA long-term, Hispanic/Latino incidence/mortality cancer rates will rise and become more similar to other racial/ethnic groups in the USA [3, 4]. These findings underscore the imperative need to better understand the cancer experience of this growing, heterogeneous US population.

Compared with non-Hispanic/Latino Whites, Hispanics/Latinos are more likely to report structural barriers to care including lower incomes and education, lack of health insurance, and no usual source of healthcare [5]. These socioeconomic differences may contribute to higher rates of late stage cancer diagnoses, and resultantly more aggressive treatment, among Hispanics/Latinos [2]. Aggressive cancer treatment modalities are known to pose significant symptom and quality of life burdens. Additionally, Hispanic/Latino cancer survivors face a range of psychosocial factors that may negatively affect their care quality and quality of life, including acculturation challenges, language barriers, and limited cancer self-efficacy [6–8]. In particular, language barriers have been linked to low patient satisfaction with their health care [9]. Research also suggests that Hispanics/Latinos without cancer are less likely to receive supportive care for mental health issues [10–13]. Thus, Hispanics/Latinos may be at increased risk for quality of life decrements following their cancer diagnoses and treatments.

Although previous systematic reviews summarized health-related quality of life (HRQOL) patterns among Latino cancer survivors, prior studies were largely focused on women with breast cancer, did not consider HRQOL experiences of survivors at different phases of the cancer care continuum, from the time of diagnosis to death, and/or failed to account for multiple domains of HRQOL [14–23]. Ferrell's Conceptual Framework on quality of life [24] has been used to study HRQOL among racially/ethnically diverse cancer survivors [24–26]. The framework considers four distinct HRQOL domains: 1) physical well-being (e.g., nausea, fatigue), social well-being (e.g., distress, sexual function), psychosocial well-being (e.g., anxiety, depression), and spiritual well-being (Fig. 1) [24]. The objective of this study was to synthesize evidence on HRQOL needs among Hispanic/Latino cancer survivors in the USA using Ferrell's HRQOL framework. This systematic review includes studies reporting HRQOL outcomes and needs among US-based Hispanic/Latino cancer survivors, of all cancer types, from the time of diagnosis to death. This broad focus allows for a comprehensive assessment of the existing evidence on Hispanic/Latino HRQOL needs. Additionally, we present recommendations for advancing HRQOL research on Hispanic/Latino cancer survivors and improving supportive care services for this rapidly growing patient population.

Methods

Literature search strategy

A comprehensive literature search was conducted in MEDLINE/PubMed, EMBASE, CINAHL, and PsycINFO, to identify relevant articles published from 1995 (publication year of Ferrell's original article on *Measurement of QOL in Cancer Survivors* [24]) through January 2020. Search terms were optimized for each database and included Medical Subject Headings (MeSH) and related text/keyword searches when appropriate. The search focused on terms used to describe (a) HRQOL (e.g., financial burden, spirituality, depression, insomnia, sexual dysfunction); in (b) Hispanic/Latino (e.g., Hispanic, Latino, Puerto Rican, Cuban); (c) cancer survivors (e.g., cancer, carcinoma*, neoplasm*) AND (survivorship, survivor OR survivors). The full search strategy can be found in Supplemental Appendix Table 1.

Inclusion and exclusion criteria

Eligibility criteria were developed with respect to the population, outcomes of interest, study design, and timing (PICOTS), and publication type. Studies were eligible for inclusion if they presented results on HRQOL among Hispanic/Latino cancer survivors of any age. Consistent with current definitions of a "cancer survivor," we employed a lifetime definition capturing time from cancer diagnosis until death from any cause [27, 28]. We used the US Census Bureau's definition of Hispanics/Latinos (individuals of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race [29]). Conference abstracts and non-peer-reviewed publications were excluded from this review, as were non-empirical studies (with the exception of literature reviews), non-English studies, non-US-based studies, and studies not separately reporting HRQOL for our target population (i.e., Hispanic/Latino cancer survivors).

Study selection

Two trained research assistants (RAs) used the eligibility criteria to independently screen titles and abstracts in duplicate for inclusion/exclusion. Studies with titles and abstracts that

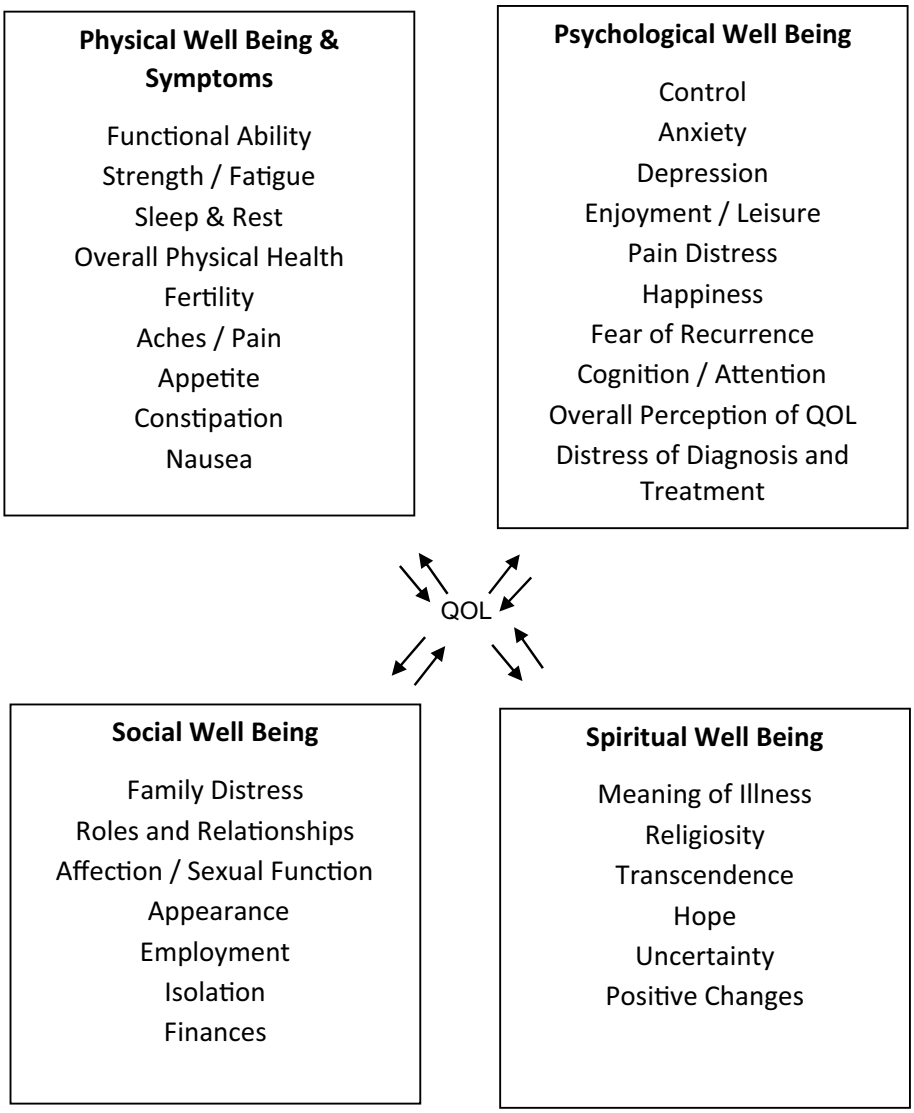


Fig. 1 Ferrell's quality of life in cancer survivors

met the inclusion criteria or lacked adequate information to determine inclusion/exclusion underwent full-text review. During the full-text review, two RAs independently reviewed all full-text articles in duplicate for inclusion/exclusion. If both reviewers agreed that a study did not meet eligibility criteria, the study was excluded. A senior member of the review team resolved any conflicts. Covidence software was used for this review. The software was set to dual screening mode which required at least 2 reviewers to agree for article inclusion/exclusion at each review phase.

Data extraction and quality appraisal

Three independent reviewers abstracted data from the 176 eligible articles using a standardized abstraction form (Supplemental Appendix Table 2) that captured study participant characteristics, conceptual frameworks employed, study design, HRQOL measures, and Latino-specific HRQOL findings. The three reviewers abstracted the first five articles together to ensure consistency. At least two reviewers were involved in each article abstraction – one person conducted the primary abstraction and the second person performed quality control. Reviewers also assessed the quality of each article using the 22-item Strengthening the Reporting of Observational Studies (STROBE) tool [30] for articles with quantitative methods, and the ten-item Critical Appraisal Skills Program (CASP) tool [31] for qualitative studies. Each study was assigned an appraisal tool ratio, calculated as the number of STROBE/CASP criteria met divided by the total number of tool criteria (Supplemental Appendix Table 2) [32]. No studies were excluded based on quality appraisal ratio scores.

Table 1 Summary of Included Studies

HRQOL domains	Study design	Examples of commonly explored HRQOL measures
Overall	Quantitative Cross-sectional: 25 studies [1–25] Quantitative Longitudinal: 7 studies [26–31] Qualitative: 1 study [32] Mixed-Methods: 0 studies Literature Review: 4 studies [33–36]	Overall: [2–8, 10, 11, 13–15, 17, 19–26, 32, 34–36]
Physical well-being	Quantitative Cross-sectional: 57 studies [2, 5, 6, 8, 9, 12–15, 17, 20, 21, 23, 24, 37–79] Quantitative Longitudinal: 21 studies [26, 28, 31, 80–97] Qualitative: 12 studies [98–108] Mixed-Methods: 7 studies [109–115] Literature Review: 8 studies [34–36, 116–120]	General Physical Health/ Functional Status: [5, 8, 14, 24, 28, 32, 38, 39, 41, 43, 46, 47, 50, 53, 54, 56, 59, 65, 68–70, 81, 83, 85, 90, 93, 94, 110–113] Lymphedema: [36, 51, 86, 97, 121] Pain: [51, 52, 69, 89, 101, 102, 106, 112] Fatigue: [28, 51, 64, 94, 103, 106]
Psychological well-being	Quantitative Cross-sectional: 74 studies [2–9, 12–18, 20, 21, 23–25, 37–44, 46, 48–65, 67–69, 71–76, 78, 122–138] Quantitative Longitudinal: 23 studies [26, 28, 31, 81–85, 87, 88, 90, 91, 93–96, 139–145] Qualitative: 27 studies [32, 98–108, 146–160] Mixed-Methods: 7 studies [109–112, 114, 115, 161] Literature Review: 12 studies [33–36, 116–120, 162–164]	General Mental Health/ Emotional Well-Being: [3, 5, 8, 24, 28, 39, 41, 43, 46, 50, 53, 54, 59, 65, 68, 69, 81, 83, 85, 90, 93, 110–113, 142] Coping: [3, 28, 102, 142, 155] Depression: [15, 28, 38, 64, 84, 94, 98, 102, 109, 122, 127, 139, 145] Stress: [4, 25, 28, 38, 98, 154]
Social well-being	Quantitative Cross-sectional: 55 studies [2, 3, 5, 7, 8, 12–16, 20–24, 37–42, 46, 48, 49, 53, 54, 56, 57, 59, 60, 62, 66, 67, 69, 73–76, 122–126, 129–132, 134, 135, 138, 165–169] Quantitative Longitudinal: 22 studies [28, 31, 81–84, 88, 90–94, 134, 140–142, 144, 145, 170–173] Qualitative: 25 studies [32, 98–106, 108, 147–152, 154, 156–160, 174, 175] Mixed-Methods: 5 studies [110–114] Literature Review: 10 studies [33–36, 116–118, 163, 164, 176]	Social Support: [15, 20, 22, 99, 101–104, 110, 114, 125, 135, 149, 150, 152, 154, 156–158] Family: [103, 106, 154] Finances: [4, 28, 32, 99, 101, 104, 106, 110, 132, 172, 173] Sexuality: [4, 28, 59, 84, 101, 103, 106]
Spiritual well-being	Quantitative Cross-sectional: 22 studies [5, 7, 8, 14, 16, 17, 20, 21, 24, 38–40, 47, 60, 64, 70, 123, 131, 135, 136, 177] Quantitative Longitudinal: 4 studies [28, 81, 94, 142] Qualitative: 24 studies [32, 98–106, 108, 147–150, 152–157, 160, 175, 178] Mixed-Methods: 3 studies [111–113] Literature Review: 6 studies [34, 35, 116, 118, 163, 164]	Spirituality/ Spiritual Well-Being: [14, 17, 24, 46, 81, 99, 100, 108, 112, 113, 135, 150, 156, 157, 178] Religion: [32, 102, 136, 150, 155, 175] Uncertainty/ Questioning God: [20, 21, 28] Prayer: [32, 64, 70, 94, 98, 106, 149]

Results

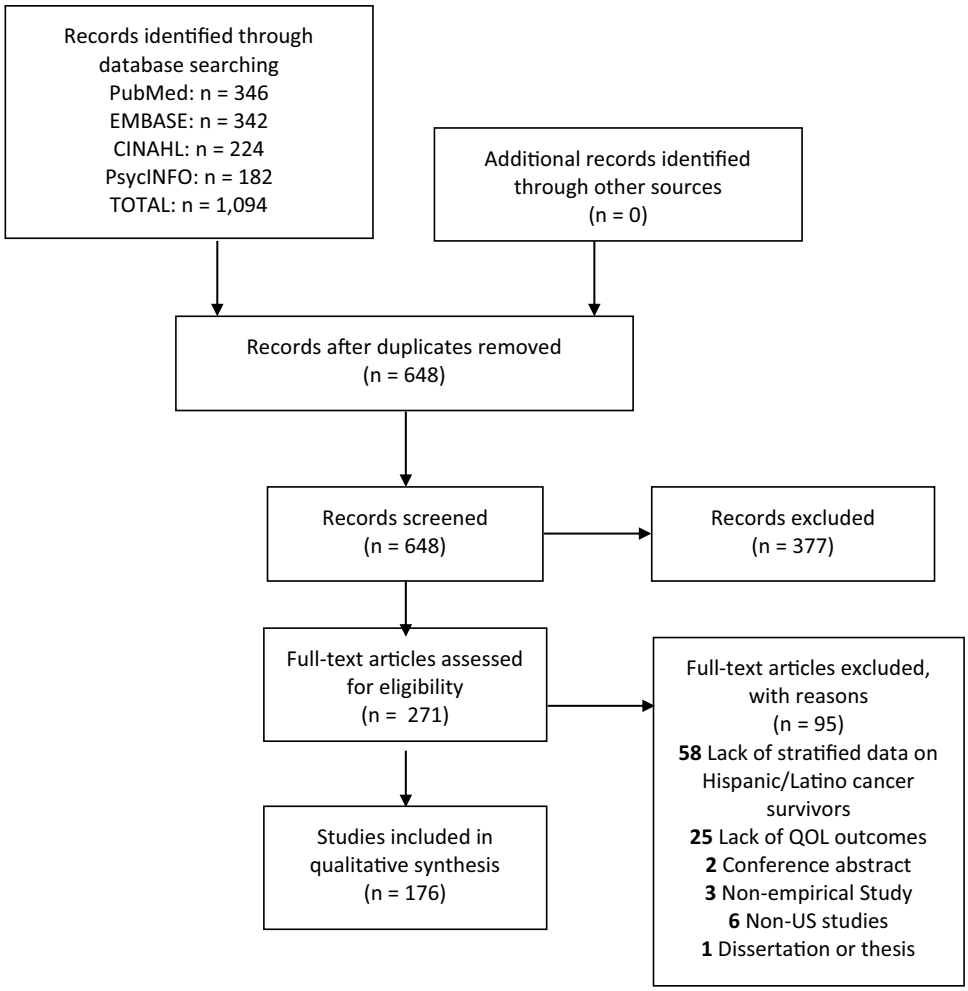
Literature search results

A total of 1,094 articles were identified through database searching, of which 648 were non-duplicates. A total of 377 articles were excluded during the initial title and abstract screening phase. Of the remaining 271 articles, 95 articles were excluded during full-text review, and 176 articles met all inclusion criteria (Fig. 2).

Description of included studies

The study designs of the 176 articles varied and included 90 (51.1%) cross-sectional quantitative, 35 (19.9%) longitudinal quantitative, 30 (17.0%) qualitative, eight (4.5%) mixed-methods, and 13 (7.4%) literature reviews (Table 1). One hundred studies focused exclusively on breast cancer, while the remainder included other (e.g., prostate) or multiple cancers. Time since cancer diagnosis for study participants ranged from 0–120 months

Fig. 2 Literature flow diagram



post-diagnosis. Most studies focused on adults. Forty studies employed a HRQOL conceptual framework and the majority of studies used validated HRQOL measurement instruments (e.g., Functional Assessment of Cancer Therapy–General [FACT-G]). All studies met at least 70% of the critical appraisal criteria, and 94 studies met > 70% of the appraisal criteria. Although literature reviews were included in this study, they were excluded from critical appraisal.

Findings by Health-Related Quality of Life Domain.

Results organized by Ferrell's HRQOL domains (i.e., psychological, physical, social, and spiritual) are presented in Table 1 and Supplemental Appendix Table 2. We included an additional section labeled *Combined "Overall" HRQOL* that summarizes studies that included some combination of the four HRQOL domains [14]. In addition to reporting HRQOL patterns among Hispanic/Latino cancer survivors, several studies examined differences in HRQOL between Hispanic/Latino cancer survivors and survivors from other racial/ethnic groups and/or correlates of HRQOL. Such studies are summarized within each HRQOL domain sub-section below. Where applicable, we summarized interventions to improve HRQOL among Latino cancer survivors.

Psychological well-being

Most included studies (143 out of 176 studies) focused on psychological well-being, with 38 studies reporting lower psychological well-being among Hispanics/Latinos compared to other racial/ethnic groups [6, 14–19, 22, 33–61]. Only six studies [62–67] reported similar mental health scores between Hispanics/Latinos cancer survivors and survivors from other racial/ethnic groups, and one study documented better mental health outcomes among less acculturated Hispanic/Latina breast cancer survivors compared to their White counterparts [68].

With a prevalence ranging from 32% [69] to 53% [70], depressive symptoms were the most commonly studied and reported HRQOL measure among Hispanic/Latino cancer survivors. Nine studies examined racial/ethnic differences in reports of depression, of which, six showed higher rates of depression among Hispanics/Latinos compared

to non-Hispanics/Latinos [15, 43, 52, 54, 57, 61], while the remaining three studies reported no ethnic differences [71–73]. For example, in a study examining post-treatment symptoms among breast cancer survivors, Hispanics/Latinas reported significantly higher rates of depression compared to non-Hispanic/Latino Whites and Blacks [43]. In contrast, a study examining HRQOL among cervical cancer survivors found no differences in rates of depression between Hispanics/Latinas and non-Hispanic/Latina survivors [73]. Several factors were associated with increased risk for depression among Hispanic/Latino cancer survivors, including lower education, poor physical/social functioning, less social (e.g., family, peer) and emotional support, higher stress, poor body image, poor coping, self-blame, and Spanish language preference [57, 70, 74, 75].

Other commonly studied and reported psychological well-being issues included emotional well-being concerns, distress or anxiety, and fear of recurrence [16–18, 34, 40, 50, 76–78]. Hispanic/Latino cancer survivors consistently reported worse emotional well-being compared to survivors of other racial/ethnic groups [14, 19, 37–39, 47–49, 51, 79, 80]. Of the 12 studies examining fear of cancer recurrence [16–18, 34, 40, 50, 58, 76–78, 81, 82], six reported higher levels of fear among Hispanics/Latinos compared to other racial/ethnic groups [16–18, 34, 40, 50, 78]. In a systematic review of studies on fear of recurrence among survivors of multiple cancers, Hispanic/Latino ethnicity was associated with higher levels of fear of cancer recurrence [18]. Additionally, two studies reported that Hispanics/Latinas with lower levels of acculturation reported the highest level of worry about recurrence compared to Hispanics/Latinas with high levels of acculturation, Black women, and White women [44, 45]. Other psychological HRQOL measures reported/studied among Hispanic/Latino cancer survivors included post-traumatic growth [35, 72, 83]; body image issues [36, 77, 78, 84–86]; stress [73, 87]; sadness [86]; worry about job loss or finances [16, 77, 88], worry about fertility, relationships, treatment effects [16, 22, 36, 51, 56, 84, 89]; neurocognitive performance [76, 90]; fear of social isolation [36]; coping [36, 88, 90–95]; and fatalism [96, 97].

Ten studies tested a variety of interventions to improve psychological well-being among Hispanic/Latino cancer survivors [20, 78, 98–105]. In-person and telephone-based education, as well as counseling and mindfulness-based stress reduction interventions were shown to improve anxiety, depressive symptoms, and psychological HRQOL among breast cancer survivors [78, 98, 101–103].

Physical well-being

A total of 105 studies focused on physical well-being among Hispanic/Latino cancer survivors. Twenty seven studies examined racial/ethnic differences in physical well-being among Hispanic/Latino cancer survivors [6, 14, 37, 38, 41, 42, 47, 53–55, 62–68, 79, 106–114], with 16 of these studies documenting worse physical well-being among Hispanics/Latinos compared to survivors from other racial/ethnic groups [14, 38, 41, 42, 47, 53, 55, 65, 79, 106–110, 113, 114]. For example, two studies examining breast, colorectal, prostate and lung cancer survivors reported lower physical HRQOL scores among Hispanic/Latino survivors compared to other racial/ethnic groups [41, 42]. Acculturation was associated with physical HRQOL, where English proficient Hispanic/Latina breast cancer survivors were more likely than their low English proficient counterparts to report better self-rated physical health [6]. In contrast, eight studies reported no differences in physical HRQOL between Hispanic/Latino survivors and survivors from other racial/ethnic groups [54, 62–64, 66, 67, 111, 112]; while one study documented better physical well-being among less acculturated Hispanic/Latina breast cancer survivors relative to their non-Hispanic/Latina White counterparts [68].

Two studies evaluated racial/ethnic differences in physical functioning with conflicting findings. In a systematic review examining HRQOL among cancer and renal disease patients, Hispanic/Latino men with prostate cancer had significantly worse physical functioning than White men, and had more bowel-related issues than their White and Black counterparts [22]. Yet, in a another study of breast, prostate, colorectal and gynecologic cancer patients, Latino cancer survivors reported higher physical functioning compared to Black and Asian cancer survivors [115].

Other measures of physical well-being reported among Hispanic/Latino cancer survivors included sexual functioning [16, 86, 116, 117], pain [14, 19, 43, 54, 77, 86, 91, 108, 118–122], fatigue [14, 19, 43, 54, 76, 78, 86, 104, 113, 119–121, 123–125], nausea [19, 86, 91, 96, 119, 121, 123], hair loss [19, 49, 86, 91, 123], lymphedema [14, 43], bowel problems [22, 123], and "other symptom bother" [49, 73, 91, 123, 126]. Studies examining racial/ethnic differences in sexual function consistently reported that Latino cancer survivors were more likely to experience adverse sexual function than other racial/ethnic groups [16, 17, 117]. Compared with other racial/ethnic groups, Hispanic/Latino and Black survivors reported worse physical toxicities from treatment [14, 22, 43, 49, 108, 117, 118]. Additionally, in a systematic review of HRQOL among Hispanic/Latina breast cancer patients, Hispanics/Latinas reported higher symptom burden for symptoms such as pain, fatigue and lymphedema [14].

Four studies examining the effect of telephone-based and multi-part interventions (including culturally sensitive health education and interpersonal counseling) on HRQOL among Hispanic/Latino cancer survivors reported significant improvements in physical well-being in intervention groups [20, 101, 104, 127].

Social well-being

One hundred and seventeen studies examined social well-being among Hispanic/Latino cancer survivors. Thirteen studies examined social well-being using a summary score measure (e.g., FACT-G) with nine reporting lower social well-being scores among Hispanics/Latinos compared to other racial/ethnic groups [14, 15, 17, 38, 39, 48, 53, 64, 109]. In a study examining HRQOL among a diverse group of cervical cancer survivors, Spanish-speaking Hispanics/Latinas survivors reported worse social well-being compared to White survivors [39]. In another cohort of multiethnic breast cancer survivors, Hispanics/Latinas reported the lowest scores for social/family well-being when compared to other groups [38]. Social support [16, 19, 36, 40, 50, 61, 63, 73, 76–78, 81, 82, 86, 88, 91–93, 95, 97, 102, 128–145] and financial hardship/job disruption [19, 33, 45, 50, 81, 82, 86, 102, 106, 121, 128, 130, 131, 140, 145–157] were the most commonly reported/studied social well-being measures. Hispanic/Latino cancer survivors reported social support as an important component of dealing with a cancer diagnosis [76–78, 81, 82, 86, 88, 92, 93, 95, 97, 102, 121, 131, 132, 134, 140, 145]. In a study among Hispanic/Latino adolescent and young adult cancer survivors, family communication around cancer and symptoms was reported as beneficial to transitioning these survivors from pediatric to adult-centered survivorship care [132]. While one study reported that Hispanic/Latino cancer survivors mainly sought support from family [21], another study noted that informal social support networks were more helpful to Hispanic/Latino survivors relative to their non-Hispanic/Latino White counterparts [16]. Although social support was strongly endorsed among Hispanic/Latino cancer survivors, several studies reported more adverse social HRQOL outcomes in Hispanic/Latino cancer survivors compared to other racial/ethnic groups, including smaller social support networks / less social support [19, 50, 138], more social avoidance [40], and lower scores on measures of interpersonal relationships [113, 139]. Hispanics/Latinos cancer survivors were also less likely to take part in support groups [135] and report changes in their marital status as a result of a cancer diagnosis [128]. In contrast, one study among cervical cancer patients reported no differences in social support between Hispanic/Latino and non-Hispanic/Latino survivors [73]. Moreover, in one study, while non-Hispanic/Latino Whites perceived more social support than Hispanics/Latinas (mean score of 145.9 vs. 139.0, $p = 0.04$), Latinas reported slightly higher spousal and familial support [138].

Hispanic/Latino cancer survivors more commonly reported job disruptions and financial hardship after their cancer diagnosis [33, 50, 128, 147–152, 157]. For example, in a study examining correlates of paid work after breast cancer diagnosis, Hispanic/Latina breast cancer survivors were more likely than Whites to stop working after a diagnosis [151]. However, another study examining factors associated with returning to work noted that there were no significant differences in job retention between Hispanic/Latino cancer survivors and Whites, although job retention was associated with acculturation [146]. Yet, another study found that Hispanic/Latino cancer survivors were more likely to return to work than White survivors [106]. Financial hardship or loss was also more prevalent among Hispanic/Latino cancer survivors compared to other racial/ethnic groups, with the exception of Blacks [86, 148, 149, 152, 157]. Other social HRQOL concerns reported among Hispanic/Latino cancer survivors included sexual health and sexuality (e.g., the negative effect of diagnosis on enjoying sex) [46, 71, 77, 84, 122, 142, 145].

Spiritual well-being

Fifty-nine studies examined spiritual well-being among Hispanic/Latino cancer survivors, and documented a range of religious/spiritual practices for coping with cancer, including: prayer [92, 111, 123, 158], faith [21, 36, 77, 84, 159, 160], finding meaning and peace [61, 143], religious/church attendance [158], and relationship with God [22, 47, 63, 64, 94, 111, 159–162]. Hispanic/Latino survivors commonly reported spirituality as a source of strength [78, 86, 93, 101] and comfort [47, 161]. The 15 studies [16, 22, 47, 61, 63, 64, 94, 111, 130, 143, 159–163] examining racial/ethnic differences in spiritual well-being generally showed that compared to other racial/ethnic groups, Hispanic/Latino and Black cancer survivors were more likely to use spirituality as a coping strategy [22, 61, 64, 94, 143, 160, 162]. In a study among patients with hematological diseases and brain tumors, compared with non-Hispanics/Latinos, Hispanic/Latino survivors reported higher spiritual well-being scores [162]. In contrast, a study examining HRQOL among survivors of childhood cancers showed no statistically significant difference in spiritual well-being among Hispanics/Latinos and non-Hispanic/Latino Whites [63]. Spirituality/religious coping was associated with other aspects of HRQOL among Hispanic/Latino cancer survivors [83, 158, 163], including lower anxiety, fatigue, and depression [158], better functional well-being [163], and less depression [61].

Combined "Overall" HRQOL

Thirty-seven studies reported on overall HRQOL domains among Hispanic/Latino cancers survivors, highlighting racial/ethnic differences between Hispanics/Latinos and other groups [8, 14, 15, 22, 39, 57, 65, 73, 75, 110, 162, 164–170]. In a multiethnic cohort of women with breast cancer, Hispanic/Latino ethnicity was associated with worse overall HRQOL compared to Black survivors [164]. Another

study of HRQOL among prostate cancer patients reported lower overall HRQOL among Hispanic/Latino and Black men relative to other racial/ethnic groups [22]. However, a study among cervical cancer survivors reported no differences in overall HRQOL between Hispanics/Latinas and non-Hispanics/Latinas [73]. In terms of correlates of HRQOL, greater acculturation, shame, and stigma were negatively associated with overall HRQOL, while more physical activity, inner peace, and better physical, social, psychological and functional well-being were positively associated with overall HRQOL among Hispanic/Latino cancer survivors [6, 57, 75, 110, 144, 163, 166–168].

Four studies documented efficacy of culturally sensitive education and counseling interventions, as well as patient navigation in improving overall HRQOL among Hispanic/Latino cancer patients [20, 78, 127, 171].

Discussion

In this systematic review, we synthesized evidence on HRQOL experiences and needs among Hispanic/Latino cancer survivors, from the time of cancer diagnosis until death. Evidence from our review suggests that HRQOL needs are high among Hispanic/Latino cancer survivors. In particular, Hispanics/Latinos reported worse psychological well-being (e.g., depression, anxiety, fear of recurrence) and suboptimal physical well-being (e.g., pain, nausea, sexual dysfunction) relative to their counterparts. In terms of social well-being, although Hispanic/Latino survivors commonly endorse preferences for family support and social network involvement during care, several studies reported lower social well-being and more job disruptions/financial hardship among Hispanics/Latinos relative to non-Hispanic/Latino Whites. In contrast, reports of spiritual well-being and spirituality-based coping were high among Hispanic/Latino cancer survivors.

Fewer studies evaluated HRQOL interventions; however, culturally responsive education and counseling were the most commonly tested interventions with demonstrated efficacy in improving HRQOL. However, given the extent of HRQOL needs in Hispanic/Latino cancer survivors, there is an urgent need for more systematic and tailored interventions to address the HRQOL needs of this growing and underrepresented segment of the cancer survivor population. In terms of potential intervention targets, previous research has documented racial/ethnic differences in clinicians' assessment of patients' symptoms, with clinicians being less likely to assess and accurately estimate HRQOL symptom burden in patients of color relative to Whites [172–175]. Uneven clinician screening of patients for HRQOL/symptom burden likely contributes to inequities in supportive care service access and delivery, including medication prescribing, and referrals to supportive care specialists (e.g., psychiatry, pain specialist, physical therapy). Although distress screening has been an American College of Surgeons accreditation standard for cancer centers since 2015 [176], recent evidence suggests that the uptake and dissemination of distress screening has been limited in some settings, including National Cancer Institute-designated cancer centers [177]. Thus, efforts to improve HRQOL among Hispanic/Latino cancer survivors must include broader uptake of routine symptom and distress screening for HRQOL issues and supportive care needs, especially depression/anxiety, physical symptoms (e.g., pain, sexual dysfunction, bowel issues), job loss and financial hardship, social support, and spiritual coping. The National Comprehensive Cancer Network (NCCNN) Distress Thermometer and Problem List is a helpful tool for quickly assessing both patient distress and a range of HRQOL concerns that closely align with the four HRQOL domains examined in this review [178]. The NCCN distress screening tool has been translated/adapted for Spanish-speakers which is important in this population due to heterogeneity in acculturation, English proficiency, and Spanish language preference. Furthermore, routine monitoring of symptom distress and HRQOL needs can be facilitated through the use of health information technology (e.g., electronic patient-reported outcome [ePRO] systems), where symptom distress and HRQOL needs can be addressed in real-time and tracked across visits. Prior studies have demonstrated the feasibility, acceptability, and efficacy of symptom monitoring through implementation of ePRO systems in routine oncology care [179], but feasibility/acceptability/efficacy testing needs to be expanded to more diverse cancer patient populations, including Hispanics/Latinos.

Moreover, addressing the HRQOL needs of Hispanic/Latino cancer survivors requires consideration of the unique cultural and linguistic needs of this patient population, as well as the current social and political context surrounding the lived experience of Hispanics/Latinos in America, where high uninsurance rates (19% of Hispanics/Latinos remain uninsured [180]) and rising anti-immigrant and xenophobic sentiments [181] continue to threaten the health and well-being of the Hispanic/Latino community. Specifically, clinicians should recognize that the socio-political context in which Hispanics/Latinos in America live may further exacerbate psychological distress and other HRQOL issues in many Hispanic/Latino survivors and hinder some from seeking and receiving critical follow-up care to address these needs. To advance equity in supportive care for Hispanic/Latino cancer survivors, it is important for cancer centers to provide culturally and linguistically appropriate supportive care services that include medical interpreters as a standard of care [182], support family/social network involvement in decision-making [182], account for patients' spiritual care needs in care planning [182], and acknowledge and address, where possible, the broader societal stressors (e.g.,

discrimination, financial hardship, job loss) that may affect Hispanic/Latino survivors' HRQOL and their engagement with the cancer care system.

While this systematic review resulted in over 150 articles meeting inclusion criteria, there are some limitations of the included studies that are worth noting. First, our study was limited to Latinos/Hispanics in the US context, where anti-immigration sentiments and health care coverage challenges remain key concerns for this subset of the cancer survivor population. Thus, our findings may not generalize to Latinos/Hispanic cancer survivors in other countries, especially countries where health care and immigration policies are more inclusive. Second, men were vastly underrepresented, with roughly a quarter of studies including men in their study sample and only two studies solely focused on men [82, 117]. Overrepresentation of women across studies potentially limits generalizability of our findings to men, which precludes efforts to understand and address gender-specific HRQOL needs among Hispanic/Latino men with cancer. Additionally, few studies presented results stratified by Hispanic/Latino subgroups (e.g., Mexican vs. Puerto Rican vs. Venezuelan), thereby overlooking possible heterogeneity in HRQOL needs among Hispanics/Latinos from different countries of origin [183]. Most studies also focused on patients with earlier stage diagnoses, but no study evaluated HRQOL needs of Hispanics/Latinos with metastatic disease or those near the end of life (EOL), when HRQOL needs are known to be greater. In terms of representation of HRQOL domains across studies, relatively few studies evaluated the social and spiritual aspects of HRQOL among Hispanics/Latinos. Finally, the majority of included studies involved a cross-sectional observational study design (90 out of 176 studies were cross-sectional; 35 out of 176 were longitudinal) which hinders identification of changes in HRQOL needs overtime, critical time frames for intervention, and effective strategies for enhancing HRQOL in this population. Future research on HRQOL among Latino cancer survivors should place greater emphasis on exploring the experiences of Latino cancer survivors in countries outside the USA, recruiting more men into studies, evaluating HRQOL needs during metastatic and EOL disease cases, stratifying data by Latino subgroup, including measures of social and spiritual HRQOL, and incorporating longitudinal and intervention study designs, where possible.

Conclusion

To our knowledge, this is the first systematic review to examine domain-specific HRQOL concerns and issues among Hispanic/Latino cancer survivors at different phases of the cancer care continuum, from cancer diagnosis to death. There is overwhelming evidence pointing to significant HRQOL needs among Hispanic/Latino survivors, including depression/anxiety, decrements in physical function, job loss and financial hardship. Routine assessment of HRQOL needs in clinical practice, as well as culturally and linguistically responsive approaches to supportive cancer care hold much promise for enhancing HRQOL outcomes in this growing segment of the cancer survivor population.

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Compliance with ethical standards

Conflict of interest Dr. Cleo A. Samuel reports research funding from National Cancer Institute and Pfizer for work unrelated to this review. All other authors do not have any conflicts of interest to disclose.

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